

**ABSTRACT**

A method and apparatus for acquiring pulse oximetry and electrocardiogram signals from an appendage of a patient. The apparatus can include a substrate that can be attached to the appendage of the patient, an emitter coupled to the substrate, a detector coupled to the substrate, and an electrode coupled to the substrate. The apparatus can generate a blood oxygen saturation output signal based on radiation received by the detector. The apparatus can also generate a reference or non-reference electrocardiogram signal. The apparatus can include a neural-muscular transmission device.